Explanation of Significant Differences

Upper California Gulch
Operable Unit 4
California Gulch Superfund Site
Leadville, CO

March 2004

U.S. Environmental Protection Agency
999 18th Street, Suite 500
Denver, CO 80202

1. Introduction

This Explanation of Significant Differences (ESD) describes the removal of planned cleanup work from the construction schedule for Fluvial Tailing Site 4 (also known as Oro City) within the Operable Unit 4 of the California Gulch Superfund Site. This change to the remedy defers the reevaluation of the need for clean up at Fluvial Tailing Site 4/Oro city until after the review of site wide surface and groundwater post-construction monitoring data. This ESD provides information about this change and includes the site history, selected remedy, basis for the change, support agency comments, statutory determinations and documentation of public participation compliance.

Interest in the cultural and historical values of Fluvial Tailing Site 4/Oro City has resulted in a change to the selected remedy and provides the basis for this ESD. Alternatives for the work planned at this area were initially discussed during a meeting on May 4, 1999. The meeting included support staff from the Colorado Department of Public Health and Environment (CDPHE), the State Historical Society and interested parties. The U.S. Environmental Protection Agency (EPA) is the lead for this ESD.

A formal public comment period is not required for an ESD. Comments from CDPHE are summarized in Section 5 of this document. EPA will publish a notice of availability and a brief description of the ESD in a major newspaper of general circulation (as required by Code of Federal Regulation 40, Section 300.435(c)(2)(i)(B). This ESD and supporting documents will become a part of the California Gulch Administrative Record file and information repository [as required by CFR 40, Section 300.435(c)(2)(i)(A) and 300.825(a)(2)].

Comprehensive information on the California Gulch Superfund site is available at:

U.S. Environmental Protection Agency
Region VIII
Superfund Record Center
999 18th Street, 5th Floor
Denver, CO 80202
(303) 312-6473

and

Lake County Public Library
1115 Harrison Avenue
Leadville, CO 80461
(719) 486-0569

On March 31,1998 the Record of Decision (ROD) for the Upper California Gulch, Operable Unit 4, was signed. Any significant, but non fundamental, changes to the selected remedy must be publicly noticed under Section 117 of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), and pursuant to CFR 40, Section 300.435 (c)(2)(i), 55 Federal Register 8666, 8852 (March 8, 1990).

2. Site History and Contamination

The California Gulch Superfund Site is located 100 miles southwest of Denver in Lake County, Colorado. The Site covers 16 ½ miles and includes the City of Leadville, various parts of the Leadville Historic Mining District and Stringtown. A section of the Arkansas River from the confluence of California Gulch to the confluence of Lake Fork Creek is also included. The Site was placed on the National Priorities List due to concerns about the impact of mine drainage on surface waters in California Gulch and the impact of heavy metals loading in the Arkansas River.

The 1994 Consent Decree divided the Site into the 12 Operable Units (OUs) shown in Figure 1. OUs 2 through 11 were designated to facilitate source remediation and correspond with areas of responsibility. OU 12, which covers the entire Site, was designated to address Site-wide Surface and Groundwater. OU 12 will be addressed after completion of source remediation in OU 2 through 11.

Upper California Gulch, OU 4, is a valley with an intermittent stream that flows to the confluence with the Arkansas River. The subject of this ESD is Fluvial Tailing Site 4/Oro City, which is a sub-basin of Upper California Gulch, OU 4. Resurrection Mining Company is responsible for conducting all response actions at OU 4. The general location of the sub-basin is shown on Figure 2.

Primary contaminant source areas within Fluvial Tailing Site 4/Oro City include seven waste rock piles and Fluvial Tailing Site 4. Waste rock surface samples show elevated concentrations of cadmium and lead. Fluvial Tailing Site 4 contains an estimated 102,000 cubic yards of tailing (intermixed with alluvial sediments) and extends for 1.5 miles along Upper California Gulch. Fluvial Tailing Site 4 samples show elevated concentrations for arsenic, cadmium, copper, lead and zinc. Since residential, commercial and industrial uses do not occur in OU 4, recreational visitors were selected as the focus of the Risk Assessment. Results of this study indicated that risks to visitors from exposure to contaminants in waste rock and surface tailing did not exceed EPA levels of concern.

EPA's 5-Year Review of the California Gulch Site concluded that there is a continued presence of metal and atypical pH contamination within the Upper California Gulch surface water despite completion of most of the response actions. Remedial action at Oro City may ultimately be necessary. EPA will continue monitoring the site.

Storm event data collected by EPA for a storm that occurred in July 2003 indicated an 84% increase in zinc loading in California Gulch between sample locations up and downstream of Oro City. EPA will continue to collect storm event data to better understand actual impacts to the environment.

Sediment sampling conducted by EPA in August of 2001 indicated that sediments at Oro City exceeded (EPA) ECOTOX threshold values for all metals except manganese and arsenic (and zinc in one instance) thus indicating that the erosion of these sediments during storm events could adversely impact water quality in California Gulch. The erosion and subsequent

deposition of these metal laden sediments may also serve to re-contaminate down stream reaches of the gulch that have already been remediated. EPA will continue to monitor sediment erosion, resulting from storm events and annual spring runoff, to determine their actual impacts on the environment.

3. Selected Remedy

The ROD for Upper California Gulch presented the selected remedy for the sub-basin Fluvial Tailing Site 4/Oro City. The selected remedy for this sub-basin involved reconstructing the Upper California Gulch stream channel, regrading the channel spoil material and regrading selected fluvial tailing areas. Specific elements included:

- Channelization of approximately 8,600 feet of Upper California Gulch
- Regrading and blending of channelization spoil material into adjacent areas
- Regrading of side slopes along channel
- Minor surface regrading to enhance positive runoff
- Amending and revegetating approximately 16 acres
- Construction of approximately eight sediment dams
- Construction of approximately 1.5 acres of wetlands

The ROD did not identify water quality goals for surface streams and heavy metal contamination. Therefore, EPA agreed to establish surface and groundwater requirements when EPA and CDPHE have determined allowable water quality standards under OU 12. This is pursuant to the 1994 Consent Decree, which designated OU12 to address Site-wide surface and groundwater. In addition, the Consent Decree states that OU 12 will be addressed only after completion of source remediation in OUs 2 through 11. The Consent Decree also recognized that additional source remediation of other appropriate response actions related to surface or groundwater could occur as part of OU 12 anywhere within the Site.

4. Basis for and Description of Significant Differences

Due to the presence of historical properties within OU 4, the ROD specified that remedial design occur in consultation with the State Historic Preservation Officer. Historical sites identified as eligible for listing on the National Register of Historic Places are identified as contributing to the Leadville Historic District. These are the subject of the *Cultural Resource Inventory of Select Mine Waste Rock Piles and Fluvial Tailing Locations in Operable Unit 4 of the California Gulch CERCLA Site, Lake County, Colorado.* Fluvial Tailing Site 4/Oro City is identified as a contributing element of the historic Leadville Mining District.

During the remedial design process, a demonstrated interest in the cultural and historical values of Fluvial Tailing Site 4/Oro City was expressed. This information triggered the consideration of alternatives to the selected remedy and provides the basis for this ESD. In 1998, Colorado Preservation Inc. (CPI) placed the Leadville Mining District on its list of "most endangered" places. CPI's 1998 site tour, and the opinions expressed by local and state government representatives who took part in the tour, were instrumental in EPA's decision to defer clean-up work at Oro City. Alternatives for the work planned at Oro City were discussed during a meeting on May 4, 1999. The

meeting included CDPHE, representatives of the Advisory Council on Historic Preservation, the State Historical Society and interested parties. Interested parties recommended various alternative methods to address contamination in the Oro City area.

In response to the cultural and historical values expressed in that meeting, EPA has removed the clean up work planned for Fluvial Tailing Site 4/Oro City from the construction schedule for OU 4. Therefore, this sub-basin is not subject to any remediation at this time. The need for clean up in the area will be reevaluated after reviewing Site-wide surface and groundwater post-construction monitoring data. The Consent Decree recognizes that additional source remediation or other appropriate response actions related to surface or groundwater could occur as part of OU 12 anywhere within the Site. Consequently, this ESD does not alter the possibility for future response actions within Fluvial Tailings Site 4/Oro City.

Included in this ESD determination are current groundwater and surface water analyses from the site. A recent assessment, dated June 11th, 2002, summarizes the surface water metal concentrations and loads in the historic Oro City area. Overall, flows, concentration and calculated loads of the key metal parameters (except dissolved lead) decrease in Upper California Gulch across the entire reach of the Oro City area.

Specific trends of the key parameters include the decrease of arsenic, cadmium, copper and manganese concentrations across the Printer Boy fluvial tailings area during both baseflow and high flow. During baseflow, there is an increase in iron, sulfate and zinc concentrations, however, the concentrations decrease across the segment during high flow. In addition, though there is an increase of the metal load, it is relatively minor and accounts for less than 10 percent of the metal load across the entire area.

In response to the information contained in the water quality assessment, no further remediation will take place in OU4/Oro City at this time. With this information and the information from the cultural and historic preservation meeting, no action will be taken in the OU4/Oro City area. Further source remediation may be required under OU 12, which covers the entire site surface and groundwater. OU 12 will be addressed after source remediation is completed in OU 2 through 11.

5. Support Agency Comments

The Colorado Department of Public Health and Environment (CDPHE) supports EPA's decision to defer remedial action at the Oro City site, under the OU 4 Record of Decision, while the agencies gather additional water quality data to determine whether remediation of the Oro City site is necessary to protect human health and the environment. However, CDPHE believes that some sort of remedy may ultimately be necessary to address contamination emanating from the Oro City site.

6. Statutory Determinations

Under CERCLA Section 121, EPA must select a remedy that is protective of human health and the environment that complies with ARAR's and is cost effective. EPA believes that the new alternative to the ROD for Fluvial Tailing Site 4/Oro City is appropriate and the remedy

will remain protective of human health and the environment. The selected remedy will continue to comply with federal and state requirements that are applicable and relevant and appropriate to the remedial action. This ESD does not fundamentally change the remedy and is cost effective.

Section 121 also states that EPA must select a remedy that uses permanent solutions, alternative treatment technologies, or resource recovery technologies to the maximum extent practicable. In addition, CERCLA prefers remedies that include treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element of the remedy. In the Final Focused Feasibility Study, it was determined that treatment of the Upper California Gulch waste rock and fluvial tailing material was impracticable.

7. Public Participation Compliance

EPA will publish a notice in the Herald Democrat newspaper that describes the ESD and its availability for review (under Section 117(c) of CERCLA, 42 U.S.C. Section 9617). A formal public comment period is not required when issuing an ESD. This ESD and all documents that support the changes and clarifications are contained in the Administrative Record of the California Gulch Superfund Site (under CFR 40, Section 300.435(c)(2)(i)).

3.17.04
Dated

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